

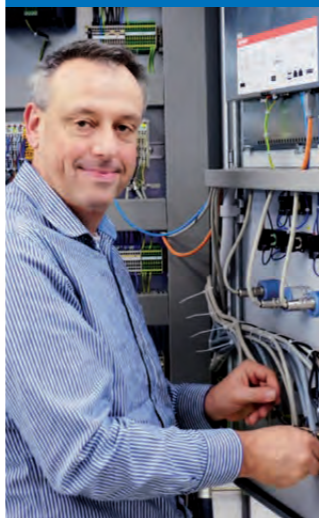
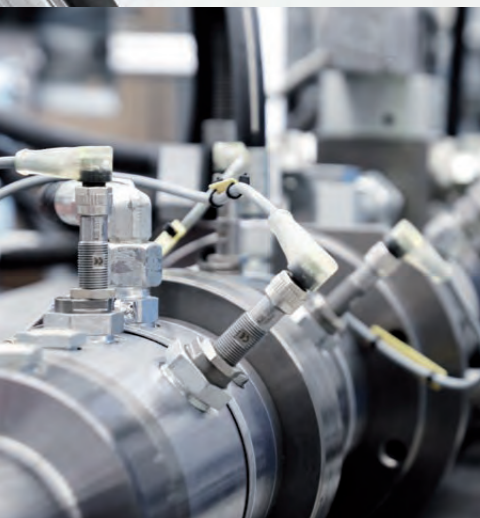
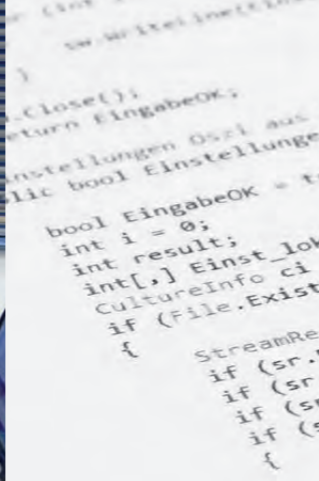
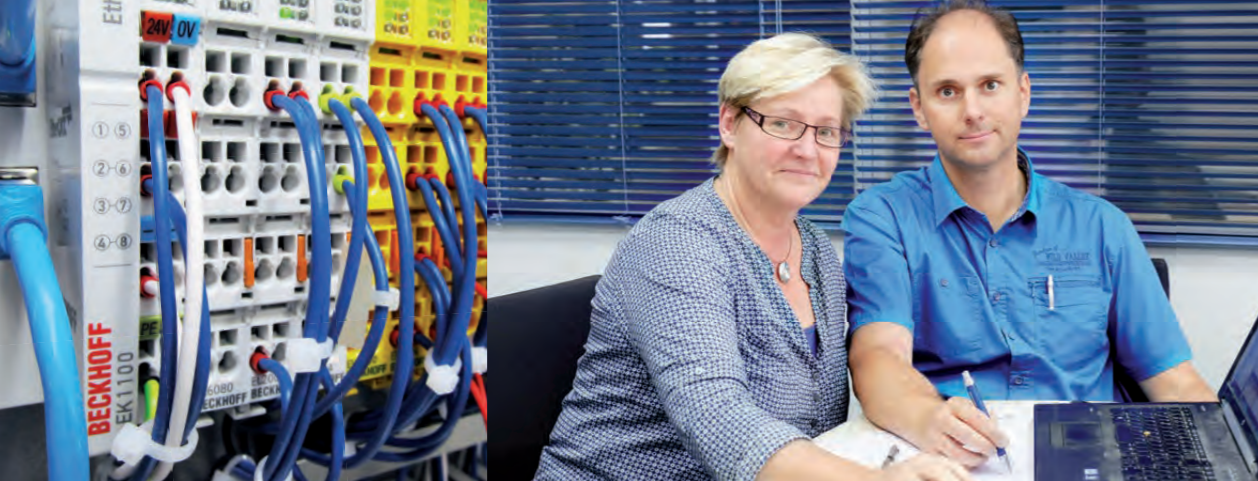


## Drive systems

Ratio-Drive® – it's just what you need!



**HANCHEN**®



## Hänchen. Choose your modules.

By choosing Hänchen as your partner, you get an individual drive solution adapted to your needs, which can be embedded seamlessly into your application.

Together with you, we define the required functions and services, and determine which hardware and software makes the most sense.

### Ratio-Drive® drive system

Are you working in the field of drive technology and need a comprehensive solution or you would like to optimise an existing solution?

We can provide you with an individual solution, whatever your line of business. Consulting service, engineering, implementation – all under one roof. And in good hands.

#### ■ Safety features

- Machinery Directive
- Documentation
- CE conformity
- Safety-related software up to PLe

#### ■ Services

- Project management
- Engineering/Planning
- Start-up
- After sales service

#### ■ Software

- HMI (Human Machine Interface)
- Communication with the process level
- Feedback control engineering
- Control software

#### □ Drive technology

- Electric actuator
- Hydraulic actuator
- Hydraulic pressure supply
- Service manifold/valve technology

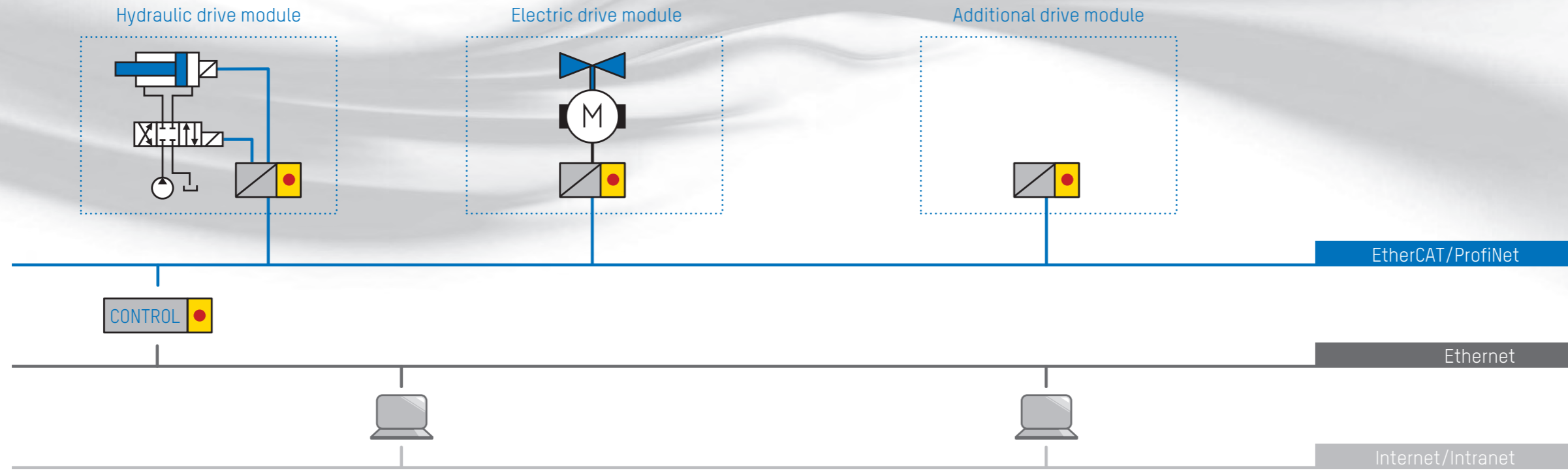
#### ■ Measuring, control & feedback control engineering

- Real-time control
- Measured value recording
- Sensor technology
- Fieldbus connection

#### ■ Construction & integration

- Machine frame
- Hydraulic system installation
- Electric connection technology
- Control cabinet construction





## What are you driven by? Hybrid, hydraulic, electric.



You can find out more about the Ratio-Drive® by visiting [www.haenchen.com](http://www.haenchen.com)  
Don't hesitate to contact us – we will be pleased to advise you!

Thanks to our drive system Ratio-Drive®, we are able to provide you with the best solution for your task with the possibility of expansion whenever needed.

### + 1 to n axes in the field

Communication between the host computer and the axles can be easily achieved using field-bus systems. Standardised bus protocols and standardised connection technology ensure cross-manufacturer compatibility. Fieldbus systems offer advantages in:

- Automation of a movement process
- Integration in control circuits of cylinder, motor and sensor technology
- Flexible expandability

### + Hydraulic or electric

Every technology has its advantages. As a company that is deeply rooted in hydraulics, our expertise extends to both electric and hydraulic drives. This makes it easy for us to choose the right module for your requirements.

We coordinate all components optimally and make sure that your drive system is energy-efficient and state-of-the-art.

	Hydraulic drive module	Electric drive module
Control concept	+	+
Diagnostic capability	+	++
Reliability against faults	++	-
Achievable safety level	PLe	PLe
Speed-load dependability	No	Load spectrum




Specific tasks.  
Individual solutions!

**Steel mill > production**

The mould oscillation system prevents the metal from adhering to the ingot mould wall during the cooling process.

**Technical implementation and Hänchen share**


At an amplitude of 5 mm and a frequency of up to 5 Hz, four cylinders move the ingot mould in the controlled sine. The high-precision synchronism deviation is max. 50 µm.

- 
 + Special I&C technology
- + Connection to central hydraulics

**Mechanical engineering > production**

The end-of-line machines subject each finished hydraulic cylinder to a final inspection.


The respective sequence of the pressure test starts automatically after the product bar code is scanned. The hydraulic pressure supply is designed for 480 bar.

- 
 + Connection to the ERP system
- + Automatic data collection

**Automotive > testing machine**

The vehicle steering test stand simulates loads that occur during the journey.


The axial load transmission is performed by cylinders. Sine movements of 2 mm at 50 Hz as well as freely definable setpoint curves simulate the load.

- 
 + Connection of the customer-side measuring system
- + Hydraulic accumulator system for acoustic measurements

**Heating engineering > test facility**

The material testing machine serves for testing water accumulators for heating systems.


Pulsation of up to 20 Hz at 20 bar is applied to the test specimen via a pressure reducer. Normal tap water is used as the test fluid.

- 
 + Integration in the process control computer
- + Installation in an existing system

**Shipbuilding > test stand**

The heavy load test stand tests the hydrostatic plain bearings of a ship's shaft for pod drives.

Hydraulic cylinders simulate the axial and radial loading of the ship's shaft up to 2.5 MN. The shaft is driven by an electric motor.

- 
 + Synchronous measurement acquisition
- + Connection of the customer-side measuring system



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**HÄNCHEN®**